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EXAMINER	
LUKS, JEREMY AUSTIN	
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2832	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,898	LARSEN, NIELS WERNER	
	Examiner	Art Unit	
	JEREMY LUKS	2832	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 May 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) *8 and 9* is/are withdrawn from consideration.

5)☒ Claim(s) *10-14,18-26,28 and 29* is/are allowed.

6)☒ Claim(s) *1-7,15-17 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 July 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: In line 7, the phrase "having a volume which movable," appears to be missing the word "is," and should be amended to read: "having a volume which is movable." Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-3, 6, 15, 17 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koelle (2002/0117350).

With respect to Claims 1, Koelle teaches a sound-absorbing device (Figure 1, #1/2/5) (Page 1, [0008]) which is placed in a sound field in air for absorbing acoustic energy from said sound field at least in a predetermined frequency region (Page 1, [0013]; Page 2, [0027]), the device comprising: a body (5) containing one or more cavities (5C), said body (5) including an outer surface with at least a portion thereof is in contact with said sound field, having a volume (of cavity 5C) which is movable between states where the volume is one of a) inflated and collapsed or b) extended and compressed (Page 2, [0023]), by a variation in a gas pressure therein in order to

change one of an absorption coefficient or a resonance frequency of said body ([0011]-[0013], [0027]); and a means for actively varying the gas pressure in said one or more cavities (5C) in order to actively vary at least one of the absorption coefficient or the resonance frequency ([0011]-[0013], [0025]-[0027]). Koelle fails to explicitly teach wherein the predetermined frequency range is a low frequency range and wherein at least one of the absorption coefficient or the resonance frequency of said body is varied between a very high value and a very low value substantially lower than the very high value. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide wherein the predetermined frequency range is a low frequency range, and wherein at least one of the absorption coefficient or the resonance frequency of said body is varied between a very high value and a very low value substantially lower than the very high value, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working range involves only routine skill in the art. In re Aller, 105 USPQ 233. In this case, there will clearly be a high and low value of the absorption coefficient or the resonance frequency when the device is inflated or deflated, as the amount of inflation controls the resonant frequency and absorption coefficient ([0013]), however, no specific values are given to the air cushion in its varying stages of inflation/deflation. Further, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. If the prior art structure

is capable of performing the intended use, then it meets the claim. Ex Parte Masham, 2 USPQ F.2d 1647 (1987).

With respect to Claims 2 and 3, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide wherein said low-frequency region has an upper frequency limit of approximately 200 Hz., and wherein thelow-frequency region is 50 Hz to 125 Hz., since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working range involves only routine skill in the art. In re Aller, 105 USPQ 233.

With respect to Claim 6, Koelle teaches where the body (Figures 1, #5) is furthermore provided with attachment mechanism (could be outer surface of air cushion layers #6 and 7, in contact with portions of components #1 and 2) for engagement with corresponding attachment mechanism (defined by corresponding engagement portions of components #1 and 2) provided on one or more sound-absorbing devices (defined by Figure 1, #1/2/5).

With respect to Claims 15, Koelle teaches method for variably absorbing sound from a sound field in air (Page 1, [0013]; Page 2, [0027]), comprising the steps of: introducing into the sound field a partially resilient body (Figure 1, #5), the body (5) having an acoustic mass and a compliance determining a resonance frequency and hence determining an active frequency region for substantial absorption of acoustic energy from said sound field ([0011]-[0013]), an outer surface (could be outer surface of air cushion #5) exhibiting a chosen acoustic resistance, such that said sound field (area external to air cushion #5) is in contact with at least a portion of the outer surface (of air

cushion #5) whereby said body (5) absorbs acoustic energy from said sound field (0027), and a closed volume (defined by cavity #5) having a gas pressure and which is movable between states where the volume is one of a) inflated and collapsed or b) extended and compressed ([0023]), by a variation in a gas pressure therein, in order to change one of an absorption coefficient or a resonance frequency of said body ([0011]-[0013], [0025]-[0027]); actively varying the gas pressure of the closed volume (defined by cavity 5C) of said body (5) to thereby vary at least one of the absorption coefficient or the resonance frequency of said body (5) ([0011]-[0013], [0025]-[0027]). Koelle fails to explicitly teach wherein the predetermined frequency range is a low frequency range and wherein at least one of the absorption coefficient or the resonance frequency of said body is varied between a very high value and a very low value substantially lower than the very high value. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide wherein the predetermined frequency range is a low frequency range, and wherein at least one of the absorption coefficient or the resonance frequency of said body is varied between a very high value and a very low value substantially lower than the very high value, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working range involves only routine skill in the art. In re Aller, 105 USPQ 233. In this case, there will clearly be a high and low value of the absorption coefficient or the resonance frequency when the device is inflated or deflated, as the amount of inflation controls the resonant frequency and absorption coefficient ([0013]), however, no specific values are given to the air cushion in its varying stages of

inflation/deflation. Further, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. If the prior art structure is capable of performing the intended use, then it meets the claim. Ex Parte Masham, 2 USPQ F.2d 1647 (1987).

With respect to Claim 17, Applicant's Specification states that the claimed equations for resonance frequency (Specification, Page 4, Lines 25-28), acoustic resistance ratio (Page 5, Lines11-13), maximum absorption coefficient and absorption bandwidth (Page 5, Lines 14-19) are well known.

With respect to Claim 27, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. If the prior art structure is capable of performing the intended use, then it meets the claim. Ex Parte Masham, 2 USPQ F.2d 1647 (1987). The Examiner considers it to be well known in the art that absorbing sound in a room will function to alter reverberation time, as they limit the amount of early reflections that would occur without their presences, as well as change the dimensions of the open space in a room without there presence. Therefor, the sound absorbers of Koelle are capable of altering the reverberation time of a room.

3. Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koelle (2002/0117350) in view of Guilloud (6,332,027).

With respect to Claims 4 and 16, Koelle is relied upon for the reasons and disclosures set forth above. Koelle further teaches a body (Figure 1, #5) within a sound field. Koelle fails to explicitly teach wherein a material of said body is chosen such that there exists a substantial impedance match between portions of the body and the surrounding sound field, at least in said low-frequency region. Guilloud teaches a similar device, wherein a material (Col. 3, Lines 27-36) of a body (Figures 4-9, #10) is chosen such that there exists a substantial impedance match between the body (12) and the surrounding sound field, at least in said low-frequency region (Col. 4, Lines 45-50; Col. 6, Lines 25-32). Further, the claimed method steps are necessitated by the product structure. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Koelle, with the apparatus of Guilloud to ensure that the noise is completely absorbed without being reflected by the body when used in combination.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koelle (2002/0117350) in view of Davis (2003/0041378).

With respect to Claim 5, Koelle is relied upon for the reasons and disclosures set forth above. Koelle further teaches wherein said gas pressure is varied ([0011]-[0013], [0025]-[0027]). Koelle fails to teach where said gas pressure is varied via a valve provided in a conduit between said at least one cavity and a source of gas, where the valve is provided with means for remote-controlling of the valve. Davis teaches a variably inflatable device (Figure 4, #30, 32), where gas pressure is varied via a valve ([0029]) provided in a conduit (38/40) between said at least one cavity (30/32) and a

source of gas (36, when used in combination), where the valve is provided with means for remote-controlling of the valve ([0029]). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Koelle, with the apparatus of Davis to provide simple substitution of one known gas inflating/deflating controlling device for another, to provide the predictable result of control the amount of inflation/deflation of the device to a desired amount, as is done by both Koelle and Davis. KSR International Co. v. Teleflex Inc., 82 USPQ 2d 1385 (2007).

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koelle (2002/0117350) in view of AAPA (Applicant's admitted Prior Art, Specification, Pages 1-7). Koelle is relied upon for the reasons and disclosures set forth above. Guilloud teaches at least one or more cavities (Figure 1, #5C). Koelle fails to explicitly teach wherein at least one of said one or more cavities is provided with sound-absorbing material within said cavity. AAPA teaches wherein it is known to fill a cavity for sound absorbing material (Page 4, Lines 10-12). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Koelle, with the apparatus of AAPA in order to increase sound absorbing capabilities of the device.

Allowable Subject Matter

6. Claims 10-14, 18-26, 28 and 29 are allowed.

7. The following is an examiner's statement of reasons for allowance:

- The Prior Art fails to teach, or suggest any obvious combination of the limitations discussed in the previous Office Action, and further comprising the limitations of **(With respect to claims 10 and 21)** a structure provided with a roller upon which said atleast one sound absorbing devices can be wound and a drive mechanism for rotating said roller; **(With respect to claim 18)** when variation of the gas pressure is no longer desired, winding up, on a structure provided with a roller, said sound absorbing device with a drive mechanism.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

8. Applicant's arguments with respect to claims 1-7, 15-17 and 27 have been considered but are moot in view of the new ground(s) of rejection. The Examiner considers the obvious combination of Koelle, Guilloud, Davis and AAPA to teach all of the limitations of these claims.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEREMY LUKS whose telephone number is (571)272-2707. The examiner can normally be reached on Monday-Friday, 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeremy Luks/
Examiner, Art Unit 2832

/Jeffrey Donels/
Primary Examiner, Art Unit 2832